Under good-manufacturing-process regulations adopted by
the Food and Drug Administration (FDA) in the late 1990s,
standardization achieved through technology and process
excellence enabled the blood-products industry to make great
strides in quality and safety. Although automation and stan-
dardization have helped make blood products safe, there is still
much work to be done to build process standardization within
the overall transfusion continuum — from the arm of the donor
to the arm of the recipient.

Transfusion medicine experts widely hold the opinion that
blood itself is safe. In fact, the major source of adverse events
today is related to giving the wrong blood to the wrong patient.
Improving communication links in the information trail — from
donation to transfusion — is the most significant challenge fac-
ing blood centers and hospitals. Yet, hospitals must look beyond
clinician education/awareness and making isolated procedure
improvements. They must achieve process excellence throughout
their operations to eliminate waste, improve efficiency, reduce
costs, and optimize safety and quality. For many organizations,
process excellence means realizing that the central laboratory
information system (LIS) by itself does not have the capabilities
to achieve the desired standardization level for the entire blood-
management process.

Centralized transfusion services (CTS) are often described as
a core laboratory environment that performs a significant amount
of patient and unit testing as well as inventory management for
a multi-facility institution. To assure that the right blood product
is at the right place at the right time, centralized transfusion
services need to build on successes achieved in standardizing
donor management and laboratory testing on the front end of the
blood-management process.

In search of relevant information
At a recent transfusion-medicine leadership summit, Joseph Fink,
MD, of New York Presbyterian Hospital, observed that generating
and communicating accurate clinical information, customized
for each institution, is the major challenge for enhancing the
integrity of the blood-utilization process. “We must go beyond
the analytical interface problems — the problems of recording
data — into this realm of extracting information from the data
that will permit us to understand our operations and control
them,” he said.

The key point here is relevance. Even the most sophisticated
LISs do not deliver relevant information that guides the clinician’s
decision making regarding transfusion appropriateness. Therefore,
efficient donor-management and blood-utilization processes must
involve more than just tracking laboratory results. While testing
assures that donated units are safe from infectious agents and
typed correctly, insufficient standardization in the overall blood-
management process has negative implications for managing the
three Cs of blood utilization:

- Cost,
- Care, and
- Capability.

Reduce errors, control waste, and improve patient safety
When assessing the value of adopting new technology to help
standardize the entire blood-management process, the cost
analysis often involves far more than just controlling blood waste.
According to another leadership summit participant, Jeanie Cal-

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Special Feature

CTS standardization: from donor to recipient

By John Damgaard
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SPECIAL FEATURE

lum, MD, of Toronto’s Sunnybrook Hospital: “The driver at our institution was the amount of money that we were spending on rework of the errors.”

While process standardization and laboratory automation are key drivers for controlling cost, safety is the main driver in enhancing the quality of care. Reduction of potential errors and more efficient resource utilization can improve patient safety and care, while achieving better outcomes.

For example, even though blood products are usable for up to 42 days, studies show that clinical outcomes are dramatically improved when blood is used within 10 days. Standardized inventory-control systems not only help reduce waste but also can optimize the efficiency of managing short-dated products.

**Capability: capturing, extracting, and communicating data**

The third C of blood utilization is capability. New technologies are driving organizational capabilities by improving efficiency, minimizing waste, and reducing errors throughout the transfusion continuum. Here is where the opportunity for improvement is greatest.

Providing better care with increasingly limited resources is an ongoing challenge facing healthcare organizations. Within the centralized transfusion services, data is not valuable unless it can be captured, extracted, and communicated when needed. With more “boutique” products in blood-bank inventories, there is a critical need for clear, clinically relevant and reportable information. With a tightly controlled inventory and better reporting, patients will receive better care. Improved communication and efficiency yields better outcomes.

A demonstrable need exists for standardization for data recording and reporting. It is impossible to compare facilities through trending or outcome studies when every site uses different methods of capturing data. Further, standardized data management across the blood industry will ensure that important tracking information is not lost, especially when disasters occur.

**The technology “halo” effect in healthcare**

Sometimes, the biggest obstacle to achieving process excellence is an over-reliance on technology acquisitions for improving efficiency and quality. This is especially true in healthcare where there is a “halo” effect on technology. In the blood bank, technology plus process excellence brought great success for quality management in the manufacture of blood products.

Blood organizations acquired automated testing systems, applying Six Sigma and other quality-management tools to accurately measure variations or defects in quality. This combination of technology and process excellence helped optimize the safety and efficiency of blood production.

The time has come to apply the same approach in order to standardize information and reporting to address the entire blood-management process. Only then can we be confident that the patient will get the right product, in the right amounts, at the right time — every time, all the time.

John Damgaard is VP/general manager of Mediware’s Blood Management Division whose product suite, including HCLL and LifeTrak, facilitate solid blood-management practices. For more information, contact him at john.damgaard@mediware.com. Mediware Information Systems sponsored the recent transfusion medicine leadership summit mentioned in this article.